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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/524,128	03/11/2005	Yoshitsugu Iijima	05092/HG	2460

1933 7590 07/07/2008

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EXAMINER	
YANG, JIE	

ART UNIT	PAPER NUMBER
1793	

MAIL DATE	DELIVERY MODE
07/07/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/524,128	IIJIMA ET AL.	
	Examiner	Art Unit	
	JIE YANG	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 April 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *5-20, 22-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *5-20, 22-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This is to acknowledge the receipt of "Terminal disclaimer" filed on 4/7/2008, which was approved on 5/1/2008. Claims 1-4 and 21 are cancelled, claims 5-20 have been amended from original claims, claims 22-29 are added as new claims, and claims 5-20 and 22-29 are pending in application.

Status of the Precious Rejection

Previous rejection of claims 1-20 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 30-43 of U.S. Patent No. 6,891,139 B2 have been withdrawn in view of the applicant's Terminal Disclaimer filed on 4/7/2008.

Previous rejection of claim 18 under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Yoshimichi Hino et al (EP 1359230, thereafter EP'230) is maintained in view of the applicant's Arguments/Remarks marked 4/7/2008.

Previous rejection of claims 5-17 and 19-20 under 35 U.S.C. 103(a) as being unpatentable over Yoshimichi Hino et al (EP 1359230, thereafter EP'230) is maintained in view of the applicant's Arguments/Remarks marked 4/7/2008. Newly amended limitations are addressed as following.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 18 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Yoshimichi Hino et al (EP 1359230, thereafter EP'230).

EP'230 is applied to the claim 18 for the same reason as stated in the previous rejections dated 12/13/2007.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 5-17, 19-20, 22-29 are rejected under 35 U.S.C. 103(a) as obvious over Yoshimichi Hino et al (EP 1359230, thereafter EP'230).

Regarding claims 5, 8, 12, and 16, EP'230 teaches a method for manufacturing a steel plate comprising the steps of: hot-rolling steel slab; quenching or accelerated cooling the steel plate; two or more cycles induction heating the steel plate by several induction heating apparatus and these processes are conducted at on-line basis (Page 2, paragraphs [0001]-[0008] and figure 1 of EP'230), which reads on the limitations of heat treating a steel product which has been subjected to quenching or accelerated cooling on a hot rolling line after hot rolling by passing the steel product at least once through a plurality of induction heating apparatuses, which are installed on the hot rolling line as recited in the instant claims. Regarding the optimum number of time of passage by determining steps a)-d), EP'230 teaches controlling the travel speed according dimension of object, induction power, the number of heating cycles and target heating temperature (Table 1, and Page 3, paragraph [0010] to page 4, paragraph [0023] of EP'230). The transfer speed (step b) of the steel product is a result-effective variable in term of uniform heating, which is evidenced by EP'230. It would have been obvious to one skilled in the art to have optimized travel speed, for example, the speed is changed every time of passing through the induction heating apparatus as recited in the instant claim 2, in order to obtain desired

uniform heating. See MPEP 2144.05 II. The number of times of passage through the induction heating apparatus (step d) is also a result-effective variable in term of uniform heating during the heating time, which evidenced by EP'230. EP'230 teaches controlling the travel speed according dimension of object, induction power, the number of heating cycles and target heating temperature (Table 1, and Page 3, paragraph [0010] to page 4, paragraph [0023] of EP'230). It would have been obvious to one skilled in the art to have optimized number of times of passage through the induction heating apparatus such that surface temperature and thickness-wise center temperature of the steel product fall in a predetermined temperature range (as claimed in the instant claims 5, 8), the predetermined upper limit temperature (as claimed in the instant claims 12 and 16), in the shortest time as claimed in the instant claims. See MPEP 2144.05 II.

Regarding claims 6-7, EP'230 teaches a method for manufacturing a steel plate comprising the steps of two or more cycles induction heating the steel plate by several induction heating apparatus and these processes are conducted at on-line basis (Page 2, paragraphs [0001]-[0008] and figure 1 of EP'230), which reads on the limitations of claims 6-7.

Regarding claims 9-11, the number of times of passage through the induction heating apparatus is a result-effective variable in term of uniform heating during the heating time, which evidenced by EP'230. Therefore, it would have been obvious to one skilled in the art to have optimized number of times of passage through the induction heating apparatus such that surface temperature and thickness-wise center temperature of the steel product fall in a predetermined temperature range within a target treatment time as claimed in the instant claims. See MPEP 2144.05 II.

Regarding claims 13-15, the heat treatment time is recognized as a result-effective variable in term of uniform heating which is evidenced by EP'230. EP'230 teaches controlling the heating time according dimension of object, induction power, the number of heating cycles and target heating temperature and travel speed (Table 1, and Page 3, paragraph [0010] to page 4, paragraph [0023] of EP'230). Therefore, it would have been obvious to one skilled in the art to have optimized heating time according different uniform heating affective parameters, for example: setting target heating time in order to prevent a succeeding steel product from waiting or shortest waiting time as claimed in the instant claim 13; making the power consumption minimum as claimed in the instant claim 14; and the number of

time of passage being heated three or more and a transfer speed at last time of passage is larger than that at the first time of passage as claimed in the instant claim 15. See MPEP 2144.05 II.

Regarding claim 17, the heat treatment time is recognized as a result-effective variable in term of uniform heating as discussed in rejection for claims 12-15. Therefore, it would have been obvious to one skilled in the art to have optimized heating time according the number of time of passage being heated three or more and a transfer speed at last time of passage is larger than that at the first time of passage as claimed in the instant claim 17. See MPEP 2144.05 II.

Regarding claims 19-20, the number of time of passage through the induction heating apparatus is a result-effective variable in term of uniform heating during the heating time, which evidenced by EP'230 as discussed in the rejections for claim 5-7. Therefore, claims 19-20 would be expected to one skilled in the art. SEE MPEP 2112 III&IV.

Regarding the newly added claims 22, 24, 26, and 28, which depend on claims 5, 8, 12 and 16, respectively, EP'230 teaches a method for manufacturing a steel plate comprising the steps of: hot-rolling steel slab; quenching or accelerated cooling the steel plate; two or more cycles induction heating the steel

plate by several induction heating apparatus and these processes are conducted at on-line basis (Page 2, paragraphs [0001]-[0008] and figure 1 of EP'230). As discussed in the rejections for claims 5, 8, 12 and 16, the transfer speed (step b) and the number of times of passage through the induction heating apparatus (step d) are recognized as result-effective variables in term of uniform heating during the heating time, which is evidenced by EP'230. Therefore, it would have been obvious to one skilled in the art to have optimized the parameters to solving an optimization problem at every time of passage, for example, transfer speed, amount of the electric power, and constraint conditions as claimed in the instant claims in order to obtain desired uniform heating. See MPEP 2144.05 II.

Regarding claims 23, 25, 27 and 29, which depend claims 22, 24, 26, and 28, respectively. EP'230 teaches a method for manufacturing a steel plate comprising the steps of: hot-rolling steel slab; quenching or accelerated cooling the steel plate; two or more cycles induction heating the steel plate by several induction heating apparatus and these processes are conducted at on-line basis (Page 2, paragraphs [0001]-[0008] and Fig.1 of EP'230). It is well settled that it is within the level of ordinary skill to operate a process continuously. In re Dilnot

138 USPQ 248; In re Korpi 73 USPQ 229; In re Lincoln 53 USPQ 51. Although EP'230 does not specify storing in a table for the data of electric power and transfer speed, EP'230 clearly teaches controlling the travel speed according dimension of object, induction power, the number of heating cycles and target heating temperature (Table 1, and Page 3, paragraph [0010] to page 4, paragraph [0023] of EP'230). Therefore, it would have been obvious to one skilled in the art to have stored the predetermined electric power and transfer speed data as claimed in the instant claims in the process of EP'230 because storing data is an essential step for the a process control.

Response to Arguments

Applicant's arguments with respect to claim 5-20 have been considered but are moot in view of the new ground(s) of rejection.

In the remark, the Applicant arguers:

1) EP'230 is not a reference against the present application because EP230 was published Nov.5, 2003, and the present application has international filling date August, 5, 2003.

2) Applicants' present claims are also patentable over EP 1 359 230. EP'230 does not teach or suggest applicants' present claims, such as a method of heat treatment of a steel plate within the shortest period of time; a method of heat treatment

of a steel plate within a target time; a method of heat treatment of a steel plate to minimize electric power consumption; and methods of determining speed and electric power at every passage and selecting the most suitable passing time based on the heat treatment time and electric power consumption.

In response,

Regarding the arguments 1, EP1 359 230 A1 has an international publication number WO 02/050317 (June, 27 2002), which is one year earlier than international filling date of the instant application. Therefore, EP'230 is proper as a prior art against the present application.

Regarding the argument 2, the Examiner disagrees with the Applicants argument. EP'230 clearly teaches controlling the travel speed according to the dimension of object, induction power, the number of heating cycles and target heating temperature (Table 1, and Page 3, paragraph [0010] to page 4, paragraph [0023] of EP'230). As discussed in the above rejections for the instant claims, it would have been obvious to one skilled in the art to have optimized the parameters for controlling the heating process since EP'230 discloses the similar method as claimed in the instant claims.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jie Yang whose telephone number is 571-2701884. The examiner can normally be reached on IFP.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-2721244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JY
/Roy King/
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